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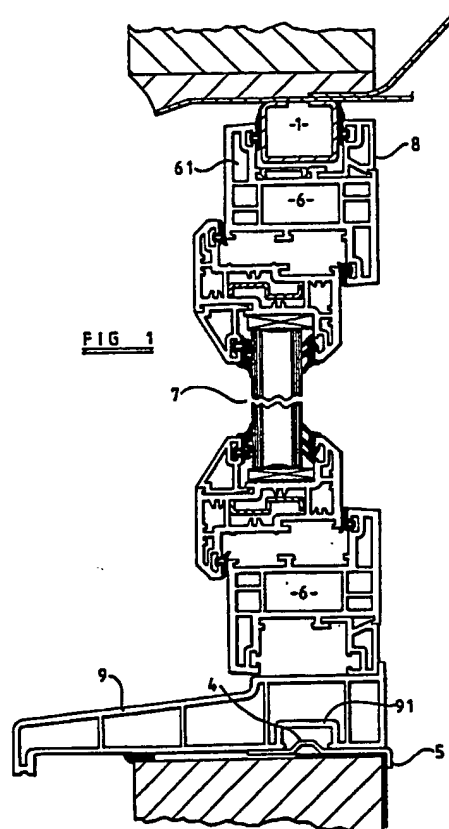
(56) Documents cited  
GB 2194273 A EP 0296515 A2

(58) Field of search  
UK CL (Edition K) E1J JGA JGB JGD JGE JM  
INT CL<sup>5</sup> E06B

## (54) Window or door frame assembly

(57) A window frame or door frame assembly, comprises:

- a) a rigid sub-frame (1) which, in use, defines an aperture in the wall of a building in which the window frame or door frame assembly is to be fitted,
- b) a window frame or door frame (6) fitting within the sub-frame (1) so as to close off the aperture, and
- c) a separate securing member (8) having a snap fit with the frame (6) and/or the sub-frame (1) so as to retain the frame (6) in engagement with the sub-frame (1).



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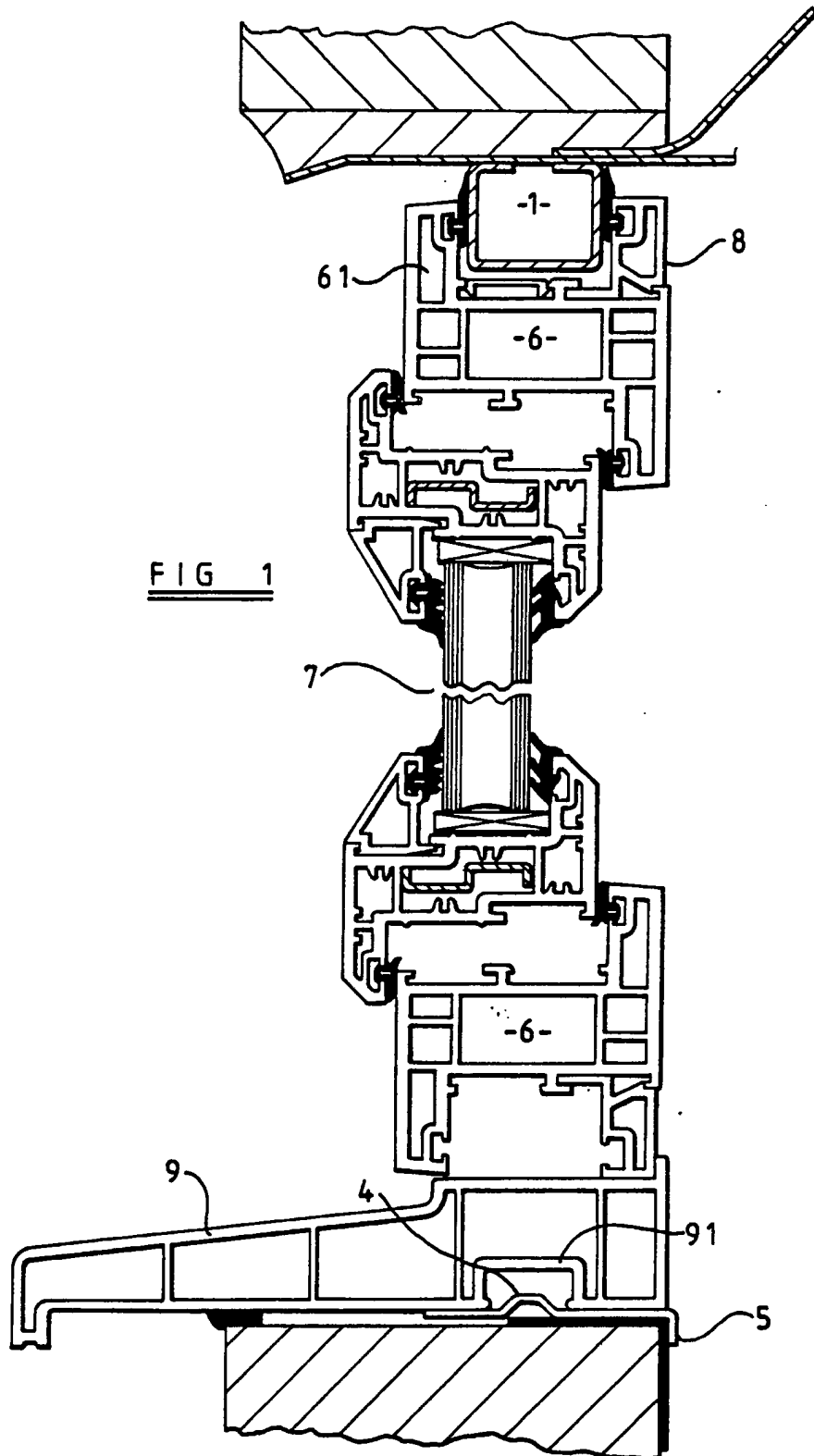


FIG 2

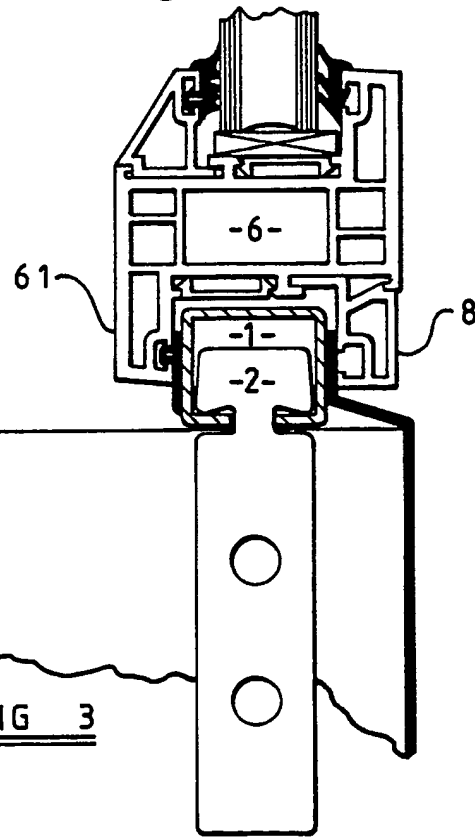
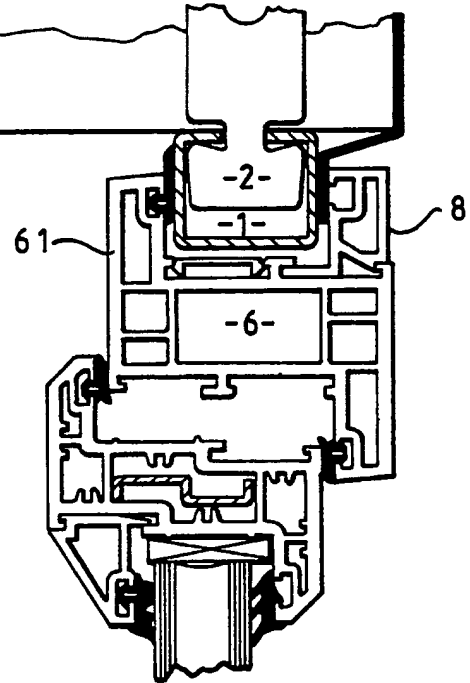
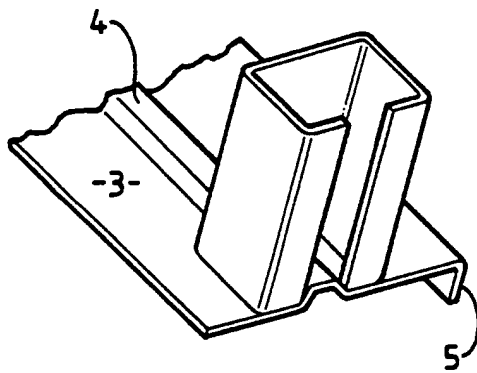
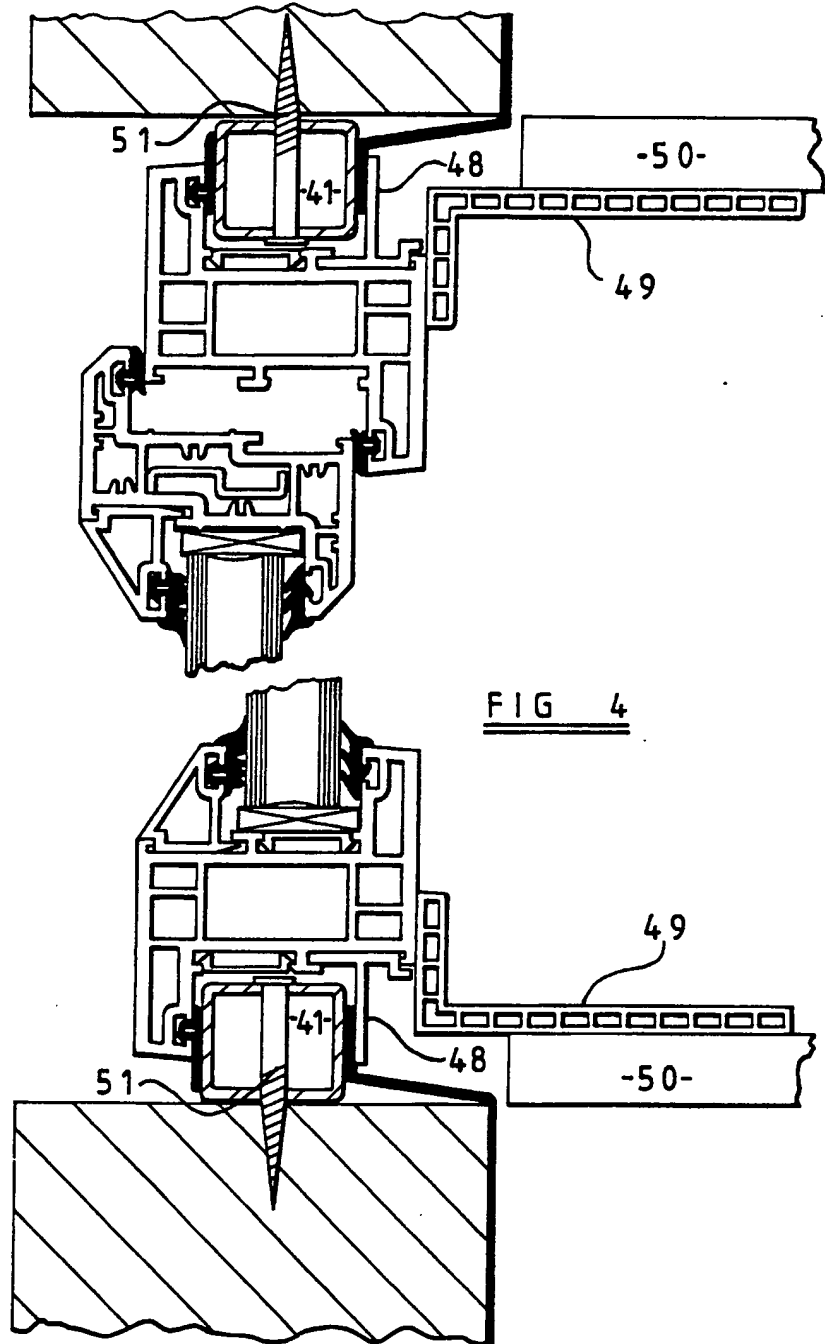
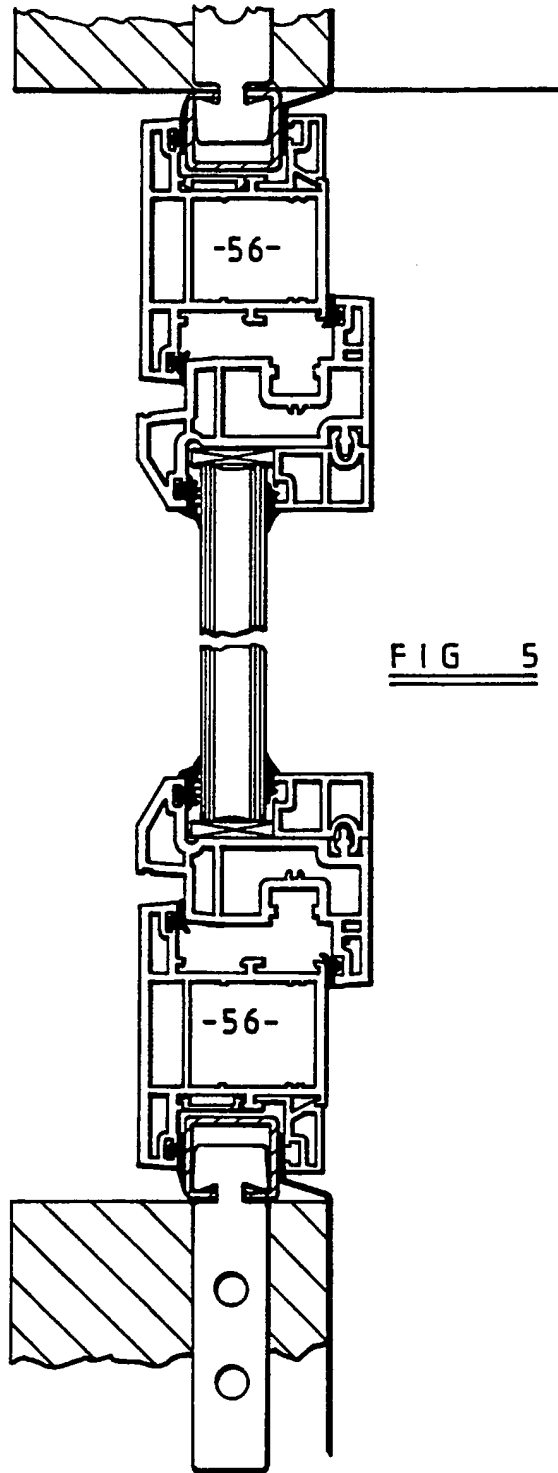


FIG 3



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Title: Window or Door Frame Assembly

This invention relates to frame assemblies for doors or windows, in particular to such frame assemblies which are easy to install, either in new properties or as replacements for existing windows or doors.

British Patent specification number 1437197 describes a method of replacing existing windows in which a new window frame is inserted into an existing wooden sub-frame. An adjustable support member is interposed between the new frame and the old sub-frame. This support member is adjustably and releasably engageable with the new frame by means of co-operating teeth on both elements. However, the releasability of this arrangement means that additional means, eg wood screws, must be used to secure the new frame.

More recently, British patent application number 2211535A has described a window assembly in which a glazed plastics frame is fitted into an opening in a rigid metal frame which is fixed in an opening in a building. The plastics frame is provided with resilient tongues which permit the frame to be moved into the opening and thereafter coact with a recess in the metal frame to prevent removal. This arrangement has the disadvantage that, once installed, it is extremely difficult to remove the plastics frame, for example if it has been installed in the wrong orientation, without damaging it.

We have now devised a window frame or door frame assembly which overcomes or substantially mitigates the disadvantages of the known systems described above.

According to the invention, there is provided a window frame or door frame assembly, comprising:

a) a rigid sub-frame which, in use, defines an aperture in the wall of a building in which the window frame or door frame

assembly is to be fitted,

- b) a window frame or door frame fitting within the sub-frame so as to close off the aperture, and
- c) a separate securing member having a snap fit with the frame and/or the sub-frame so as to retain the frame in engagement with the sub-frame.

The window frame or door frame assembly of the invention is advantageous primarily in that its installation is very easy and involves few operations. In addition, the frame may be offered to the sub-frame after the brick work surrounding the sub-frame has been finished. This means that after installation of the frame there is no risk of soiling of the finished window assembly by the further use of mortar in the vicinity. Also, should it be necessary to remove the window frame for any reason, this can be accomplished relatively easily with damage occurring, if at all, only to the securing member.

According to another aspect of the invention, there is provided a method of fitting a window frame or door frame assembly to the wall of a building, which method comprises

- a) securing to the wall a rigid sub-frame which defines an aperture,
- b) offering up to the sub-frame a window or door frame so as to close off the aperture, and
- c) snap-fitting a separate securing member to the frame and/or sub-frame so as to retain the frame in engagement with the sub-frame.

The rigid sub-frame is preferably incorporated in the building to which the door or window frame is to be fitted as the building is constructed. The sub-frame is conveniently of metal, eg galvanised steel.

The window or door frame is conveniently of plastics material, eg PVC. Mounted in the frame may be one or more window and/or door units. The window and/or door units may, for example, be

mounted slidably or by means of hinges.

The window or door frame is preferably provided with a peripheral flange, preferably extending along at least two of the sides of the window or door frame, which abuts the rigid sub-frame when the window or door frame is placed in position.

The securing members preferably extend substantially the whole length of the side of the window or door frame assembly to which they are fitted. The securing member may, for example, be similar to a conventional glazing bead. We have found it convenient to apply such bead-like securing members to the top and sides of the window or door frame assembly, the downward weight of the frame assembly generally being sufficient to eliminate any need for a securing member at the base of the assembly. This makes it possible for a sill to be fitted to the window or door frame prior to the frame being offered up to the sub-frame. This further simplifies installation and is a further advantage over known systems, eg that described in GB 2211535A, in which the sill is fitted as a separate unit after installation of the frame.

The invention will now be described in more detail, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a vertical section through a first embodiment of a window frame assembly according to the invention,

Figure 2 is a perspective view of a portion of a galvanised steel sub-frame forming part of the window frame assembly of Figure 1,

Figure 3 is a horizontal section through the window frame assembly of Figure 1,

Figure 4 is a horizontal section through a second embodiment of a window frame assembly according to the invention, this

embodiment being particularly suitable for use as a replacement window, and

Figure 5 is a horizontal section through a third embodiment of a window frame assembly according to the invention.

Referring first to Figures 1 and 3, a window frame assembly according to the invention comprises a rigid galvanised steel sub-frame (1) which is generally rectangular. The top and sides of the sub-frame (1) are of generally box like construction, the sides being secured to the surrounding brick work by means of steel ties (2).

As can be seen more clearly from Figure 2, the base (3) of the sub-frame (1) is generally flat but has a raised portion (4) and a downwardly depending internal lip (5), both extending the full width of the window aperture.

Fitting within the sub-frame (1), is a window frame comprising a Z-shaped frame member (6) one limb (61) of which forms a peripheral flange which abuts the sides and top of the sub-frame (1).

A casement window (7) of generally conventional design is mounted within the frame member (6) by means of hinges (not shown).

The frame member (6) is retained in engagement with the sub-frame (1) by three bead like securing members (8) which have a snap fit with the top and sides of the frame member (6).

At the base of the frame, the frame member (6) is connected by screws (not shown) to a window sill (9).

In use, the sub-frame (1) is incorporated into a building structure as that structure is constructed. Once the surrounding brick work has been finished, the window frame comprising the frame member (6), the casement window (7) and the window

sill (9), is offered up to the sub-frame (1), a recess (91) in the base of the sill (9) being located on the raised portion (4) of the base of the sub-frame (1) and the peripheral limbs (61) of the frame member (6) abutting the external surfaces of the sides and top of the sub-frame (1). The bead-like securing members (8) are then located adjacent the internal surfaces of the top and sides of the sub-frame (1) and snap fitted into engagement with the frame member (6), for example by tapping with a rubber mallet. This retains the frame member (6) in tight engagement with the sub-frame (1).

The embodiment described above is suitable for newly built properties. The modification shown in Figure 4 is more appropriate for replacement of windows in existing properties where internal plastering is present and is not to be damaged. In this embodiment, a simpler and more compact form of securing member (48) is used and the fitting operation is concluded by the application of a suitable trim (49), eg of plastics material, to the existing plaster work (50). Also, the sub-frame (41) is secured to the existing brick work not by means of steel ties, as shown in Figure 3, but by screws (51).

Finally, in the embodiment shown in Figure 5, the Z shaped frame member (6) of Figure 1 is replaced by a T-shaped frame member (56).

Claims

1. A window frame or door frame assembly, comprising:
  - a) a rigid sub-frame which, in use, defines an aperture in the wall of a building in which the window frame or door frame assembly is to be fitted,
  - b) a window frame or door frame fitting within the sub-frame so as to close off the aperture, and
  - c) a separate securing member having a snap fit with the frame and/or the sub-frame so as to retain the frame in engagement with the sub-frame.
2. A window frame or door frame assembly as claimed in Claim 1, wherein the sub-frame is of metal.
3. A window frame or door frame assembly as claimed in Claim 2, wherein the sub-frame is of galvanised steel.
4. A window frame or door frame assembly as claimed in any one of the preceding claims, wherein the window or door frame is of plastics material.
5. A window frame or door frame assembly as claimed in any one of the preceding claims, wherein the window or door frame is provided with a peripheral flange which abuts the rigid sub-frame when the window or door frame is placed in position.
6. A window frame or door frame assembly as claimed in Claim 5, wherein the peripheral flange extends along at least two of the sides of the window or door frame.
7. A window frame or door frame assembly as claimed in any one of the preceding claims, wherein the securing members extend substantially the whole length of the side of the window or door frame assembly to which they are fitted.

8. A window frame or door frame assembly as claimed in any one of the preceding claims, wherein the securing member is similar to a conventional glazing bead.

9. A window frame or door frame assembly as claimed in Claim 8, wherein the bead-like securing members are applied to the top and sides of the window or door frame assembly, the downward weight of the frame assembly sufficient to eliminate any need for a securing member at the base of the assembly.

10. A method of fitting a window frame or door frame assembly to the wall of a building, which method comprises

- a) securing to the wall a rigid sub-frame which defines an aperture,
- b) offering up to the sub-frame a window or door frame so as to close off the aperture, and
- c) snap-fitting a separate securing member to the frame and/or sub-frame so as to retain the frame in engagement with the sub-frame.

11. A method of fitting a window frame or door frame assembly as claimed in Claim 10, wherein the rigid sub-frame is incorporated in the building to which the door or window frame is to be fitted as the building is constructed.

12. A window frame or door frame assembly substantially as hereinbefore described with reference to the accompanying Figures.

13. A method of fitting a window frame or door frame assembly substantially as hereinbefore described.

**Patents Act 1977****-8-****Examiner's report to the Comptroller under  
Section 17 (The Search Report)**

Application number

**9125587.7****Relevant Technical fields**(i) UK CI (Edition **K**) **E1J JGA, JGB, JGD, JGE, JM**(ii) Int CL (Edition **5**) **E06B**

Search Examiner

**J ROWLATT****Databases (see over)**

(i) UK Patent Office

(ii)

Date of Search

**22 APRIL 1992**

Documents considered relevant following a search in respect of claims

**1-13**

| Category<br>(see over) | Identity of document and relevant passages   | Relevant to<br>claim(s) |
|------------------------|--|-------------------------|
| <b>X</b>               | <b>GB 2194273 A</b> (SMITH & SONS) see especially the snap-fit securing member 12          | <b>1-13</b>             |
| <b>X</b>               | <b>EP 0296515 A2</b> (HELMITIN) see especially the snap-fit securing member 15 of Figure 1 | <b>1-13</b>             |

| Category | Identity of document and relevant passages | Relevant to claim(s) |
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